

The direct inference from these facts is as follows: If a nerve filament, arising from a ganglion cell unites itself with and is merged into another nerve tube at one of its annular constrictions, it becomes impossible to tell in what sense the impulse comes to it, and in which direction it is transmitted; it is, moreover, impossible to maintain the view that the ganglion cell is a motor or sensory centre, receiving a sensory impression or sending a motor impulse, by a simple conducting filament going toward the periphery.

THE PHYSIOLOGY OF THE FIFTH NERVE.—M. Fr. Legrand, *Thèse de Paris*, 1875. (Abstr. in *Rev. des Sci. Med.*)

After a short *resumé* of the anatomical distribution of the trigeminus, the author rapidly traces the history of the successive phases of the physiology of this nerve, from the beginning of the century. Then, and this is the original and important portion of his memoir, he gives the account of two cases of fracture of the base of the cranium, followed by cure, but with complete paralysis of the fifth pair; one on the right and the other on the left side, and after an analysis of the symptoms, he offers physiological considerations of which the following are the more important ones.

*Sensibility.* In one of the cases no sensation was experienced when an Itard sound was introduced into the eustachian tube. Notwithstanding, Longet has excluded the eustachian tube from the parts innervated by the fifth nerve; this observation shows sufficiently that, as is admitted by anatomists to-day, the tube is supplied by the nerve of Bock, an afferent branch of Meckels ganglion. (In the other case, this mucous membrane was still sensible, but in this the paralysis was not absolute, as the sensibility was still retained in the gingival mucous membrane and in the uvula.) One of the patients had keratitis conjoined with iritis; a condition ordinarily complicated with intense photophobia. In this case the absolute lack of photophobia coinciding with the paralysis of the fifth nerve, shows plainly that photophobia has its point of departure in the corneal nerves, and that in this membrane, as has been noticed by Cl. Bernard, the nerves of general sensibility are influenced by the special agent light.

*Motricity.* We find in M. Legrand's memoir many interesting considerations on the innervation of the anterior belly of the digastric and the mylo-hyoid by the motor root of the trigeminus. We will notice more particularly the facts relative to the velum palati, which the author says was less stretched to the right. We know that the external peristaphyline muscle, the tensor of the velum, receives its motor branch from the otic ganglion; but this ganglion possesses motor fibres from two sources, the facial and the third division of the trigeminus. The paralysis of this muscle shows that its motor root comes from the trigeminus. We may mention here also that some considerations lead the author to omit the hypothesis that paralysis of the trigeminus may cause loss of tenacity in muscles innervated by the facial.

*Trophic disorders.* These two cases are examples of paralysis of the fifth nerve, that have not up to the present, at the end of two years, been accompanied, in one of the patients, with scarcely any trophic troubles, and in the other with only disorders (in the nutrition of the eye) caused only by external irritation (dust arising from a special kind of work.)

*Muscular Contractility.* The two observations which serve as a basis for this memoir, are further examples of long persistence of the muscular contractility, in addition to those already given by Legros and Onimus; the author remarks, also, that in his two patients, the muscles innervated by the facial and deprived of their only sensible nerve, were found more excitable on the paralyzed side, either to the faradic or the galvanic currents.

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ARE THERE TASTE FIBRES IN THE CHORDA TYMPANI?—C. A. Carl, *Archiv. der Ohrenheilk.*, X. 152. (Abstr. in *Centrabl. f. d. Med. Wissensch.*)

Since his earlier youth, the author had suffered from inflammation of the middle ear, the consequence of a combined attack of diphtheritic inflammation of the throat, and scarlet fever. The tympanum was almost destroyed, and the mucous membrane of the labyrinth wall in the tympanic cavity was in a cicatricial condition. Audition was seriously affected; the functions of the facial and trigeminus were intact. Sensibility was retained over the anterior two-thirds of the left half of the tongue, and by irritation of the chorda tympani in the aural cavity, a prickling sensation was produced on this anterior side of the tongue. On the other hand, the sense of taste is entirely destroyed on the left side of the tongue in its anterior two-thirds. With the additional fact, that after mechanical irritation of the chorda tympani in the middle ear, a very notable salivary secretion was observed from the left caruncula salivalis, it seems improbable to the author, that the gustatory fibres in the minute cross section of the chorda tympani could be alone destroyed, leaving the sensory and secretory ones intact. He comes rather to the conclusion that there was no lesion of the nerve. On the other hand, there are other nerves in the aural cavity, the destruction or injury of which may be accompanied with loss of the sense of taste. The filaments connected with the tympanic plexus, a branch from the petrosal ganglion of the glosso-pharyngeal enters the tympanic cavity through the tympanic canaliculus, and meets twigs from the trigeminus which reach here by way of the processus superficialis minor. In chronic disease of the middle ear, this plexus is involved. But since, on the other hand, clinical observations make it almost certain that some gustatory fibres exist in the course of the chorda tympani, the author calls in to explain this fact, an actually existing connection of the geniculate ganglion of the facial with the tympanic plexus, to which a branch from the sphenopalatine ganglion of the trigeminus is given through the inferior superficial petrosal nerve. The manner, also, in which the author thinks the taste fibres reach the anterior portion of the tongue from the brain is as follows: they first enter the lingual branch of the trigeminus and while the greater portion of them reach the glosso-pharyngeus via the otic ganglion, the inferior superficial petrosal nerve, the tympanic plexus, and petrosal ganglion, a